

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA2005/000154

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7): A61K 41/00, A61N 5/06, A61P 17/00, A61P 17/10, A61K 31/409, A61K 31/555

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(7): A61K, A61N, A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

TechSource, WEST, Delphion/DWPI, Espacenet, Chemical Abstracts, PubMed, ChemIDplus, Highwire, ScienceDirect, Google/Scholar:

IPC and ECLA: A61K, A61N, A61P

Keywords: acne+seborrhea+related terms, photodynamic therapy+photochemotherapy+photothermolysis, skin penetration+skin absorption+enhancer, photosensitizer+related terms, porphyrin (green porphyrin, lemutoporphin, verteporphin, ALA, et al), PEG+polyethylene glycol+hydrophobic+lipophilic+liposome+vehicle+formulation+transdermal+related terms

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US20030050678 A1 (SIERRA et al) 13 March 2003 example II; page 5, paragraphs [0041] and [0045]. page 3, paragraph [0029]; page 4, paragraphs [0033] to [0038].	1-2, 8, 20-21 1-21
X	WO03017824 A2 (LIGHT BIOSCIENCES, LLC) 3 March 2003 example 3; column 25, line 25 to column 26, line 9.	1-3, 8-21
X Y	WO03039597 A1 (QLT INC.) 15 May 2003 example; page 2, lines 16-23; page 14, lines 22-25. page 16, lines 13-14; claims 1-16.	1-21 1-21
Y	US6492420 B2 (PHOTOCURE AS) 10 December 2002 whole document	1-6, 8-21

☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 13 May 2005 (13-05-2005)	Date of mailing of the international search report 30 May 2005 (30-05-2005)
Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476	Authorized officer Yong-Huang Chen (819) 956-4113

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US6600951 B1 (GENERAL HOSPITAL CORPORATION) 29 July 2003 experimentals; column 11, line 27 to column 13, line 33.	1-6, 8-21
Y	PIERRE M.B., et al, "Stratum corneum lipids liposome for the topical delivery of 5-aminoLevulinic acid in photodynamic therapy of skin cancer", <i>BMC Dermatol.</i> 2001, 1-5. (PMID:11545679)	1-6, 8-21
Y	CASAS A., et al, "The Influence of the Vehicle on the Synthesis of Porphyrins after Topical Application of 5-aminilaevulinic acid. Implication in cutaneous photodynamic sensitization", <i>Br. J. Dermatol.</i> 2000, 143(3), 564-72. (PMID:10971330)	1-6, 8-21
Y	CASAS A., et al, "ALA and ALA hexyl ester in free and liposomal formulations for the photosensitisation of tumour organ cultures", <i>Br. J. Cancer</i> 2002, 86(5), 837-42. (PMID: 11875750)	1-6, 8-21
Y	DIVARIS D.X., et al., "Phototoxic damage to sebaceous glands and hair follicles of mice after systemic administration of 5-aminolevulinic acid correlates with localized protoporphyrin IX fluorescence", <i>Am J Pathol.</i> 1990, 136(4), 891-7. (PMID: 2327473)	1-6, 8-21
Y	MORDON S., et al, "Site-specific methylene blue delivery to pilosebaceous structures using highly porous nylon microspheres: an experimental evaluation", <i>Lasers Surg Med.</i> 2003, 33(2), 119-25. (PMID: 12913884)	1-6, 8-21
A	US2002156062 A1 (QLT INC.) 24 October 2002 example 1; paragraphs [0054] to [0059]	1-21
T	CHARAKIDA A., et al, "Phototherapy in the Treatment of Acne Vulgaris-What is its Role?", <i>Am. J. Clin. Dermatol.</i> 2004, 5(4), 211-216. (PMID: 15301568)	1-21
T	TAUB A.F., "Photodynamic therapy in dermatology: history and horizons", <i>J. Drugs Dermatol.</i> 2004, 3(1 suppl.), S8-25. (PMID:14964757) <a href="http://www.findarticles.com/p/articles/mi_m0PDG/is_1_3/ai_113650109/print">http://www.findarticles.com/p/articles/mi_m0PDG/is_1_3/ai_113650109/print</a>	1-21
T	CEILLEY R.I., "Advances in topical treatment of acne and rosacea", <i>J. Drugs Dermatol.</i> 2004, 3(5 suppl.), S12-22. (PMID:15552595) <a href="http://www.findarticles.com/p/articles/mi_m0PDG/is_5_3/ai_n13457711/print">http://www.findarticles.com/p/articles/mi_m0PDG/is_5_3/ai_n13457711/print</a>	1-21

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## Box No. II Observations where certain claims were found unsearchable (Continuation of Item 2 of the first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons :

1. ☒ Claim Nos. : 1-19

because they relate to subject matter not required to be searched by this Authority, namely :

Although claims 1-19 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the photosensitizer composition.

2. ☒ Claim Nos. : 1-21

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically :

Instant claims 1-21 are related to the medical use of a photosensitizer composition defined by reference to a desirable characteristic of the whole composition, namely a "hydrophobic and/or lipophilic photosensitizer composition" (see page 3, lines 11-15). Whereas photosensitizers are defined in dependent claims 5-7, there is no definition for other ingredients in the composition in all claims, which should achieve the desired holistic characteristic in combination with the photosensitizer. Further, whereas the claims cover all compositions defined to have this functional characteristic, the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT with only one single composition in the examples. Thus, the claims lack clarity and support and the application lacks disclosure such that a comprehensive search over the whole of the claimed scope is neither meaningful nor practically feasible.

Consequently, the search has been carried out for those parts of the claims which appear to be clearly supported and disclosed, comprising the "photosensitizer" as specified in claims 5-7 and the "hydrophobic and/or lipophilic" carrier similar to that of the examples and the discernable equivalents according to the description on pages 11-15, having regard to the general underlying concept.

3. ☐ Claim Nos. :

because they are dependant claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

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Patent documents cited in search report	Publication Date	Patent family members	Publication Date
US20030050678 A1	2003-03-13	-	-
WO03017824 A2	2003-03-03	BR0212142 A CA2457590 A1 EP1427482 A2 IL160505D D0 JP2005503388 T	2004-08-24 2003-03-06 2004-06-16 2004-07-25 2005-02-03
WO03039597 A1	2003-05-15-15	BR0214004 A BR0214009 A CA2466425 A1 CA2466437 A1 EP1441767 A1 EP1443964 A1 US2004015214 A1 US2004029856 A1 WO03039596 A1	2004-11-03 2004-11-03 2003-05-15 2003-05-15 2004-08-04 2004-08-11 2004-01-22 2004-02-12 2003-05-15
US6492420 B2		AT202076 T AU708076 B2 AU4950096 A CA2215069 A1 CN1137087 C CN1178521 A CZ291132 B6 CZ9702848 A3 DE69613365 D1 DE69613365 T2 EP0820432 A1 EP0820432 B1 ES2157424 T3 GB9504948D D0 GB9525822D D0 HU9800460 A2 JP11501914 T LU90956 A9 NO974163 A NO974163 D0 NZ303251 A PT820432 T RU2191010 C2 US6034267 A	2001-06-15 1999-07-29 1996-10-02 1996-09-19 2004-02-04 1998-04-08 2002-12-11 1998-03-18 2001-07-19 2002-05-02 1998-01-28 2001-06-13 2001-08-16 1995-04-26 1996-02-21 1998-07-28 1999-02-16 2002-11-13 1997-09-09 1997-09-09 2000-10-27 2001-09-28 2002-10-20 2000-03-07
US6600951 B1	2003-07-29	CA2360202 A1 EP1140180 A2	2000-07-13 2001-10-10

# INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in  
search report

Publication date

Patent family members

Publication Date

		US2004006328 A1	2004-01-08
		WO0040266 A2	2000-07-13
US2002156062 A1	2003-10-24	CA2439500 A1	2002-10-24
		EP1377274 A2	2004-01-07
		JP2004532219T	2004-10-21
		WO02083097 A2	2002-10-24
		ZA200306728 A	2004-09-17